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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,965	09/26/2006	Yuji Ishida	0230-0234PUS1	2062

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EXAMINER

HELMER, GEORGIA L

ART UNIT	PAPER NUMBER
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1638

NOTIFICATION DATE	DELIVERY MODE
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01/30/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/567,965	Applicant(s) ISHIDA, YUJI	
	Examiner GEORGIA HELMER	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21, 23 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/23/08, 5/6/08, 3/13/08, 12/17/07, 12/18/06, 11/13, 06, 2/1006.</u> | 6) <input type="checkbox"/> Other: _____ |

OFFICE ACTION

Status of the Claims

Applicants' election dated 10/24/08 to the Lack of Unity mailed 9/24/08 is acknowledged. Applicant has elected with traverse, Group I, claims 1-21 and 24. Applicant has traversed that claim 23 should have been placed in Group I, and not in Group II. Applicants' traversal on this point is persuasive, and claim 23 has been placed in Group I. Claims 1-21, 23 & 24 are examined in the instant Action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6,8-21, 23 & 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Allison et al (USP 57,238,862), issued July 3, 2007, filed August 22, 2002, published Aug 14, 2003 as US 2003/0154517.

Applicant's claims are drawn to a method for Agrobacterium-mediated gene transduction into plant material coming (1) preparing the plant material and (2) infecting the plant material with Agrobacterium, wherein a medium enriched

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with a metal salt containing copper is used in steps (1) and/or (2). Dependent claims are drawn to various concentrations of copper, various plants (maize and rice), explants (unspecified or immature embryos), regenerating transgenic plants, and to the method having addition treatments of pressurization, heat, centrifugation and/or sonication.

Applicants do not define the word “enriched”, as in “enriched” in “copper ion” used in claim 1. “Enriched is interpreted to mean any copper concentration greater than zero.

Allison et al (USP 57,238,862) teach to a method for transforming wheat plants using Agrobacterium-mediated transformation, comprising (1) preculturing wheat immature embryo plant material (column 10, lines 60-67) and (2) infecting the plant material with Agrobacterium (Examples 7 & 8, Column 14, lines 25-67), wherein a medium enriched with a metal salt containing copper is used in either or both steps (1) and/or (2) (see claim 1).

Allison's method teaches the use of copper sulfate (column 9, line 6), and various concentrations of copper (see column 6, lines 51-58). Allison teaches the method using enriched copper concentrations of 2 – 3000 uM (column 20, table 15 lines 1-24). This includes copper concentrations of 0.25 uM to 2 uM, (Table 17, column 20), as well as a range of 20, 40, & 80 uM copper (Table 15 col. 19). Allison teaches the use of copper enriched medium in the Agrobacterium infection step (column 17, Example 2, Tables 10-12, lines 1-45), wherein the copper is in the range of 20-40 uM, which is within the range of 1-50 uM. Allison

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teaches the method comprising regeneration of plants in medium containing enriched copper sulfate (Table 12, column 18), wherein the copper is in the range of 1-10 uM (Table 15, column 19). Allison teaches the method using medium containing copper sulfate at 1 uM and 2 uM in the infection step (col 20, Table 17, title), which is in the range of 1-10 uM.

Allison often expresses the copper concentration by comparison to MS medium, a standard plant tissue medium. MS medium is 0.1 uM in copper sulfate. Therefore, Allison's "increased MS salt from between about 1.5 times to about 3 times standard" refers to a copper concentration of 0.15 uM to about 0.3 uM. See claim 1 for example. See Murashige and Skoog, 1962.

Allison teaches the method using various plants (wheat, maize and rice (claims 1, 5 & 7 and Abstract, p. 1), explants (immature embryos) (see column 6, lines 33-34) and regenerating transgenic plants. Wheat is a monocot plant, as are rice and maize.

Accordingly, Allison anticipates the claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the

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differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-21, 23 & 24 are rejected under 35 U.S.C. 103(a) as being obvious over Allison et al (USP 57,238,862), issued July 3, 2007, filed August 22, 2002, published Aug 14, 2003 as US 2003/0154517, in view of Hansen, G. (USP 6,162, 965, issued 19 December 2000).

Applicant's claims are drawn to a method for Agrobacterium-mediated gene transduction into plant material coming (1) preparing the plant material and (2) infecting the plant material with Agrobacterium, wherein a medium enriched with a metal salt containing copper is used in steps (1) and/or (2, having additional treatments of pressurization, heat, centrifugation and/or sonication.

The teachings of Allison are discussed above.

Allison et al do not teach the method having additional treatments of pressurization, heat, centrifugation and/or sonication.

Hansen, G. (USP 6,162, 965, issued 19 December 2000) teaches the use of heat treatment in preparing maize plant material for Agrobacterium infection (column 13, lines 55-59 and claims 8-10).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the method of transformation as taught by Allison to include the step of heat treatment of maize somatic embryos as taught by Hansen. One of ordinary skill in the art would have been motivated to do so

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because the heat shock treatment is observed to be beneficial to the treated plant tissues (column 14, lines 19-67, Tables 4 & 5, especially line 46-47).

Accordingly, the claimed invention is prima facie obvious.

Remarks

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GEORGIA HELMER whose telephone number is (571)272-0796. The examiner can normally be reached on 10-6 Monday, Tuesday & Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on 571-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Georgia Helmer
Patent Examiner
Art units 1638/1661
14 January 2009

/Anne R. Kubelik/
Primary Examiner, Art Unit 1638